FAILURES OF PLANETARY PROBES

Ralph D Lorenz, Lunar and Planetary Lab, University of Arizona, AZ 85721
rlorenz@lpl.arizona.edu

Not every probe mission is successful. A number of probes have been lost completely (e.g. Mars Polar Lander, DS-2,) Other probes and landers have suffered mild to severe degradation due to subsystem failures (e.g. telemetry commutator and radio system failure on Venera 7 ; progressive degradation of Pathfinder/Sojourner ; MER file handling anomaly) Still other missions have suffered science loss due to instrument failure (e.g. Viking seismometer ; Pioneer Venus external sensors) or instrument operation outside calibration range (Pathfinder APXS ; Galileo probe instruments.)

Lessons can be drawn from failures, when their occurrence is acknowledged and documented (which is not always in the parochial interests of those involved). This poster presentation offers a brief survey of probe mission failures and what can be learned – the particular problems of planetary probes (e.g. EDL systems and environmental uncertainty) are discussed.

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